Havey Sitter.

Rhodora

JOURNAL OF THE

NEW ENGLAND BOTANICAL CLUB

Conducted and published for the Club, by

BENJAMIN LINCOLN ROBINSON, Editor-in-Chief

MERRITT LYNDON FERNALD
HOLLIS WEBSTER
CARROLL WILLIAM DODGE
Associate Editors

WILLIAM PENN RICH, Publication Committee

Vol. 30. January, 1928. No. 349.

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Boston, Mass.
300 Massachusetts Ave.

Preston and Rounds Co.

RHODORA.—A monthly journal of botany, devoted primarily to the flora of New England. Price, \$2.00 per year, postpaid (domestic and foreign); single copies (if available) 20 cents. Volumes 1-8 or single numbers from them can be supplied at somewhat advanced prices which will be furnished on application. Notes and short scientific papers, relating directly or indirectly to the plants of the northeastern states, will be gladly received and published to the extent that the limited space of the journal permits. Forms will be closed five weeks in advance of publication. Authors (of more than one page of print) will receive 25 copies of the issue in which their contributions appear. Extracted reprints, if ordered in advance, will be furnished at cost.

Address manuscripts and proofs to

B. L. ROBINSON, 3 Clement Circle, Cambridge, Mass.

Subscriptions, advertisements, and business communications to W. P. RICH. 300 Massachusetts Avenue. Boston. Mass.

Entered at Boston, Mass., Post Office as Second Class Mail Matter.

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Mhodora

JOURNAL OF

THE NEW ENGLAND BOTANICAL CLUB

Vol. 30.

January, 1928.

No. 349.

NEWFOUNDLAND MOSSES COLLECTED BY MR. BAYARD LONG IN 1924–26.

EDWIN B. BARTRAM.

(Plate 158)

Newfoundland seems to have been neglected by bryologists to a great extent and our knowledge of its moss flora is practically confined to the collections of the Rev. Charles A. Waghorne as recorded in Macoun's Catalogue of Canadian Plants, Part VI—Musci, supplemented by random collections in various herbaria and the treatment by Renauld & Cardot in Delamare's Florule de l'Isle Miquelon.

Mr. Long, who accompanied Prof. Fernald and his associates in the expeditions to Newfoundland in 1924-25 and 26, was naturally preoccupied to a great extent with the flowering plants but generously collected the mosses as opportunity offered. A detailed account of these expeditions will be found in Prof. Fernald's thrilling notes of "Two Summers Botanizing in Newfoundland," reprinted from Rhodora, Vol. 28, Nos. 328-336, April-December 1926, as No. LXXII of the Contributions from the Gray Herbarium of Harvard University. Considering the fact that Mr. Long had no previous bryological experience the number of species represented is surprisingly large and the choice of material evidences a keen discrimination. The limestone areas of the northwest coast bordering the Straits of Belle Isle were naturally the most productive of especially interesting arctic types such as Distichium Hagenii, Dicranum elongatum, Dicranum groelandicum, Desmatodon systylius, Stegonia latifolia, Bryum Longii etc., while the southern sections of the Island are represented by more familiar Canadian types including Dicranum majus, Dicranella cerviculata, Mnium hornum, Ulota Ludwigii, Ulota phyllantha, Pogonatum capillare etc.

While the following list shows to an interesting extent the relative abundance of the various species in the localities from which collections were made it is, of course, far from a complete reflection of the mosses of Newfoundland and it seems highly probable that the calcareous forelands of the northwestern coast will amply reward further bryological activities in that region.

The list comprises 165 species and varieties of which one, *Bryum Longii*, is described as new. A complete series of specimens has been deposited with the Academy of Natural Sciences in Philadelphia and a nearly complete set has been retained by the writer.

The sequence of genera is that used by Brotherus in Engler & Prantl, Pflanzenfamilien, Ed. 2, Vols. 10 and 11 and excepting Sphagnum, which follows the treatment of Dr. A. LeRoy Andrews in the North American Flora Vol. 15, Part 1, the nomenclature is the same as used in these volumes.

SPHAGNACEAE

SPHAGNUM PALUSTRE L. South Hill, St. John's, Aug. 14, 1924; Trepassey, Aug. 16, 1924; Bay Bulls, Aug. 22, 1924.

SPHAGNUM IMBRICATUM Hsch. South Hill, St. John's, Aug. 14,

1924.

Sphagnum Lindbergii Schp. Blanc Sablon, Labrador, Sept. 3, 1925.

SPHAGNUM PULCHRUM (Linbd.) Warnst. Bay Bulls, Aug. 22, 1924. SPHAGNUM TENELLUM Pers. Port aux Basques, July 21, 1924; Savage Cove, Aug. 7, 1924.

SPHAGNUM SUBSECUNDUM Nees. Quirpon Island, Aug. 7, 1925. SPHAGNUM PYLAESII Brid. Port aux Basques, July 21, 1924; Burgeo, Sept. 9, 1926; Sept. 11, 1926.

SPHAGNUM WARNSTORFII Russow. Bay Bulls, Aug. 22, 1924.

Sphagnum capillaceum (Weiss) Schrank. Savage Cove, Aug. 7, 1924; South Hill, St. John's, Aug. 14, 1924; Trepassey, Aug. 16, 1924; Bay Bulls, Aug. 22, 1924; Ramea, Aug. 30, 1924.

ANDREAEACEAE

Andreaea Alpestris (Thed.) Schp. Bay Bulls, Aug. 20, 1924.

FISSIDENTACEAE

Fissidens osmundioides (Sw.) Hedw. Flower Cove, July 30, 1924; Ship Cove, Sacred Bay, Aug. 11, 1925.

DITRICHACEAE

CERATODON PURPUREUS (L.) Brid. Common.

DISTICHIUM CAPILLACEUM (Sw.) Bry. eur. Common on calcareous substrata throughout the Island.

DISTICHIUM INCLINATUM (Ehrh.) Bry. eur. Brig Bay, Aug. 5, 1924; Ship Cove, Sacred Bay, Aug. 9, 1925; Blanc Sablon, Labrador, Sept. 3, 1925.

DISTICHIUM HAGENII Ryan. Ship Cove, Sacred Bay, Aug. 11,

1925; Savage Cove, Aug. 29, 1925.

This interesting little species is very similar in general appearance to D. inclinatum but seems to be clearly separable by the curious arrangement of the peristome teeth in eight distinct groups of two teeth each. It is recorded from arctic North America by Biotherus in Die Laubmoose Fennoskandias and in the 2nd edition of Engler & Prantl's Pflanzenfamilien, Vol. 10: 166 but is not included by Mrs. E. G. Britton in her treatment of the genus in the North American Flora, Vol. 15, Part 1. It is evident that the species has been very imperfectly known from this continent and its discovery by Mr. Long in Newfoundland is therefore especially noteworthy.

SELIGERACEAE

Seligera donniana (Sm.) C. M. Flower Cove, July 30, 1924. This seems to be the first authentic record for this minute species northeast of Maine. It is a rare moss under any circumstances and its occurrence in northern Newfoundland is a very interesting range extension.

DICRANACEAE

Anisothecium Rubra (Huds.) Lindb. Governors Island, Bay of Islands, Sept. 3, 1926.

DICRANELLA CERVICULATA (Hedw.) Schp. Trepassey, Aug. 16,

1924; Burgeo, Sept. 9, 1926.

DICRANELLA HETEROMALLA (L.) Schimp. Curling, Aug. 11, 1924; Burgeo, Aug. 30, 1924.

DICRANELLA SECUNDA (Sw.) Lindb. Bard Harbor, St. John Bay,

July 27, 1925.

Paraleucobryum longifolium (Ehrh.) Loesk. Rose Blanche, Aug. 31, 1924.

Cynodontium polycarpum (Ehrh.) Schp. Blanc Sablon, Labrador, Sept. 3, 1925.

Oreoweisia serrulata (Func.) De Not. Quirpon Island, Aug. 7, 1925.

Oncophorus Wahlenbergii Brid. Mt. Moriah, Aug. 11, 1924.

nu

Oncophorus virens (Sw.) Brid. Flower Cove, July 14, 1925; Quirpon Island, Aug. 7, 1925.

Kiaeria starkei (Web. & Mohr.) Hag. Bard Harbor, St. John

Bay, Aug. 13, 1925.

Kiaeria blyttii (Schp.) Broth. Bard Harbor, St. John Bay, Aug. 13, 1925.

DICRANUM ELONGATUM Schleich. Bard Harbor, St. John Bay, July 27, 1925.

DICRANUM GROELANDICUM Brid. Quirpon Island, Aug. 6, 1925. DICRANUM FUSCESCENS Turn. Port aux Basques, July 20, 1924; Whitbourne, Aug. 25, 1924; Gaulton, Aug. 29, 1924; Bard Harbor, St. John Bay, July 27, 1925, Aug. 13, 1925, Aug. 26, 1925.

DICRANUM FUSCESCENS Turn. var. FALCIFOLIUM Braithw. Bard

Harbor, St. John Bay, July 27, 1925.

DICRANUM FUSCESCENS Turn. var. congestum (Brid.) Husn. Bard Harbor, St. John Bay, Aug. 13, 1925.

DICRANUM BERGERI Bland. Flower Cove, July 29, 1924; Quirpon

Island, Aug. 7, 1925.

DICRANUM BONJEANI De Not. Port aux Basques, July 20, 1924; Flower Cove, Aug. 1, 1924; Brig. Bay, Aug. 7, 1924; Bay Bulls, Aug. 20, 1924; Argentia, Aug. 27, 1924; Rose Blanche, Aug. 31, 1924; Ha-Ha Point, Aug. 5, 1925; Quirpon Island, Aug. 7, 1925; Bard Harbor, St. John Bay, Aug. 13, 1925.

DICRANUM BONJEANI De Not. var. JUNIPERIFOLIUM (Sendt.)

Braithw. Flower Cove, July 27, 1924.

DICRANUM SCOPARIUM (L.) Hedw. Brig Bay, Aug. 5, 1924;

Whitbourne, Aug. 25, 1924; Gaulton, Aug. 29, 1924.

DICRANUM MAJUS Turn. Flower Cove, July 24, 1924, July 12, 1925; Savage Cove, Aug. 7, 1925; Mt. Moriah, Aug. 11, 1924; Sandy (Poverty) Cove, July 25, 1925; Ship Cove, Sacred Bay, Aug. 11, 1925; Tweed Island, Bay of Islands, Sept. 2, 1926.

ORTHODICRANUM MONTANUM (Hedw.) Loeske. Bard Harbor, St.

John Bay, Aug. 13, 1925.

Orthodicranum flagellare (Hedw.) Loeske. Ramea, Aug. 30, 1924.

LEUCOBRYACEAE

Leucobryum glaucum (L.) Schp. Port aux Basques, Aug. 31, 1924.

ENCALYPTACEAE

ENCALYPTA RHABDOCARPA Schwaegr. Brig Bay, Aug. 5, 1924; Mistaken Cove, July 11, 1925; Brandy Island, July 18, 1925; Brig Bay, Aug. 4, 1925; Ha-Ha Point, Aug. 5, 1925; Ship Cove, Sacred Bay, Aug. 9, 1925; Dog Peninsula, Aug. 25, 1925.

POTTIACEAE

GYMNOSTOMUN RUPESTRE Schleich. Brig Bay, Aug. 5, 1924.



HYMENOSTYLIUM CURVIROSTRE (Ehrh.) Lindb. St. John Island, July 31, 1925; Ha-Ha Point, Aug. 5, 1925; Anse aux Sauvages Aug. 11, 1925; Cape Raven, Mauve (Noddy) Bay, Aug. 12, 1925.

TORTELLA TORTUOSA (L.) Limp. Port aux Basques, July 23, 1924; Flower Cove, July 30, 1924; Brig Bay, Aug. 5, 1924; Sandy (Poverty)

Cove, July 25, 1925.

DIDYMODON RUBELLUS (Hoffm.) Bry. eur. Brig. Bay, Aug. 5, 1924; Ha-Ha Point, July 17, 1925; Brandy Island, July 18, 1925; Flower Cove, July 23, 1925; Ship Cove, Sacred Bay, Aug. 11, 1925.

BARBULA VINEALIS Brid. Brid Bay, Aug. 5, 1924; Flower Cove,

July 14, 1925.

Pottia Heimii (Hedw.) Bry. eur. Sandy Cove, Ingornachoix Bay, Aug. 9, 1924.

Stegonia Latifolia (Schwaegr.) Vent. Doctor Hill, Highlands of St. John, Aug. 24, 1925.

DESMATODON SYSTYLIUS Bry. eur. Doctor Hill, Highlands of St.

John, Aug. 24, 1925.

Desmatodon cernuus (Hub.) Bry. eur. Flower Cove, Aug. 2, 1924; Sandy Cove, Ingornachoix Bay, Aug. 9, 1924; Bard Harbor, St. John Bay, July 29, 1925; Aug. 19, 1925; St. John Island, July 31, 1925.

TORTULA RURALIS (L.) Ehrh. Brig Bay, Aug. 4, 1925.

TORTULA NORVEGICA (Web. fil.) Lindb. Brig Bay, Aug. 4, 1925.

GRIMMIACEAE

GRIMMIA APOCARPA (L.) Hedw. Flower Cove, July 30, 1924; Brig Bay, Aug. 4, 1925; Cape Raven, Mauve (Noddy) Bay, Aug. 12, 1925; Bard Harbor, St. John Bay, Aug. 13, 1925; Savage Cove, Aug. 29, 1925.

GRIMMIA ALPICOLA Sw. Harbor Breton, Aug. 29, 1924.

GRIMMIA ALPICOLA Sw. var LATIFOLIA (Zett.) Hag. Bard Harbor, St. John Bay, Aug. 13, 1925.

RHACOMITRIUM FASICULARE (Schrad.) Brid. Bay Bulls, Aug. 20, 1924; Harbor Breton, Aug. 29, 1924; Rencontre, Aug. 30, 1924.

RHACOMITRIUM HETEROSTICHUM (Hedw.) Brid. var. GRACILESCENS

Bry. eur. Harbor Breton, Aug. 29, 1924.

RHACOMITRIUM HYPNOIDES (L.) Lindb. Port aux Basques, July 21, 1924, Aug. 20, 1924, Aug. 31, 1924; Flower Cove, July 30, 1924; Bay Bulls, Aug. 20, 1924; Four Mile Cove, July 20, 1925; Bard Harbor, St. John Bay, July 27, 1925; South Head, Bay of Islands, Sept. 1, 1926.

RHACOMITRIUM CANESCENS (Weis., Tim.) Brid. Blanc Sablon,

Labrador, Sept. 3, 1925.

FUNARIACEAE

Funaria microstoma Bry. eur. Cape Norman, Aug. 13, 1925. Funaria hygrometrica (L.) Sibth. Port aux Basques, July 23, 1924, Aug. 31, 1924; Flower Cove, Aug. 1, 1924, July 26, 1925; Curling, Aug. 11, 1924.

SPLACHNACEAE

Tayloria splachnoides (Schleich.) Hook. Bard Harbor, St. John Bay, July 27, 1925.

Tetraplodon bryoides (Zoeg.) Lindb. Port aux Basques, July

20, 1924; St. John Island, July 31, 1925.

Tetraplodon bryoides (Zoeg.) Lindb. var. cavifolius (Schp.)

Mol. Blanc Sablon, Labrador, Sept. 3, 1925.

Tetraplodon bryoides (Zoeg.) Lindb. var. paradoxus (R. Br.) Hag. Savage Cove, July 14, 1925; Four Mile Cove, July 20, 1925.

Tetraplodon angustatus (L. f., Sw.) Bry. eur. Bard Harbor,

St. John Bay, Aug. 3, 1925.

SPLACHNUM PEDUNCULATUM (Huds.) Lind. Bard Harbor, St.

John Bay, July 19, 1925.

Splachnum ampullaceum L. Savage Cove, Aug. 7, 1924; Trepassey, Aug. 16, 1924.

BRYACEAE

Webera cruda (L.) Bruch. Bard Harbor, St. John Bay, July 27, 1925; Ship Cove, Sacred Bay, Aug. 9, 1925; Cape Norman, Aug. 13, 1925.

Webera Nutans (Schreb.) Hedw. Common.

Webera commutata Schp. Bard Harbor, St. John Bay, Aug. 19, 1925.

Webera proligera (Lindb.) Kindb. Bard Harbor, St. John Bay, July 27, 1925.

Anomobryum concinnatum (Spruc.) Lindb. Flower Cove, July 23, 1925.

LEPTOBRYUM PYRIFORME (L.) Wils. Flower Cove, July 27, 1924, Aug. 1, 1924; St. Barbe, Aug. 4, 1924; Brig Bay, Aug. 8, 1924; Ha-Ha Point, Aug. 5, 1925.

Bryum Pendulum (Hsch.) Schp. Boat Harbor, July 19, 1925; St. John Island, July 31, 1925; Anse aux Sauvages, Aug. 9, 1925.

BRYUM CALOPHYLLUM R. Br. St. Barbe, Aug. 4, 1924.

BRYUM KNOWLTONI Barnes? Bard Harbor, St. John Bay, Aug. 19, 1925.

This collection consists of a very small tuft with but a few capsules in rather poor condition and the determination is therefore uncertain.

Bryum Longii Bartr. sp. nov.

Plate 158. Figs. A-H.

Synoicous. Plants small in dense yellowish green tufts, reddish below; stems 5-10 mm. high, branched, closely matted together with

radicles below, branches short, densely foliate; leaves ovate, short acuminate, concave, about 1.5 mm. long, the lower smaller, margin nearly entire or minutely denticulate in the upper third, revolute in the lower half; costa reddish, ending below the apex in the lower leaves. percurrent or short excurrent into a more or less recurved point in the upper leaves; leaf cells lax, hexagonal-rhomboid above, up to 65 µ long by 20 µ wide, about two rows at the margin narrow and elongate forming a yellowish border, toward the base rectangular, up to 6 times as long as wide; seta 10-14 mm. long, red; capsule pedulous. 2-2.25 mm. long, pryiform, reddish brown, contracted to a short, wrinkled neck when dry, not contracted under the mouth, rather glossy, exothecal cells thin walled; lid convex, apiculate; peristome pale, teeth pale yellow, not darker at the base, finely papillose, hyaline at the tip, inner peristome rudimentary, very fragile and delicate, consisting of a basal membrane about one-third the height of the teeth without segments or cilia; annulus large; spores punctulate, 18-22 µ in diameter.

Type: sandy, clayey spots on limestone rock barrens, Boat Harbor, Newfoundland, July 19, 1925, B. Long, No. 228. Also from Savage Cove, on limestone barrens, July 14, 1925; Cape Norman, on limestone barrens, Aug. 13, 1925; Sandy (Poverty) Cove, clayey soil on limestone barrens, July 13, 1925; Black Cove, Big Brook, peat on limestone rock, July 16, 1925; Flower Cove July 30, 1924.

When this beautiful little moss is in fruit the abundance of bright ruddy capsules must present one of the striking bryological features of the localities where it is found. The species corresponds very closely to the description of *Bryum globosum* Lindb., which has been recorded from arctic North America, in everything but the imperfect inner peristome which, in all of the capsules examined from the various localities in Mr. Long's collection, shows only a basal membrane without any evidence of segments or cilia. It is a privilege to be able to associate Mr. Long's name with such a distinct species in this very complex genus.

Bryum Pallens Sw. St. Barbe, Aug. 7, 1925; Flower Cove, July 23, 1925; Ha-Ha Point, Aug. 5, 1925; Ship Cove, Sacred Bay,

Aug. 9, 1925.

Bryum inclinatum (Sw.) Bland. Flower Cove, July 27, 1924, July 29, 1924, July 30, 1924, Aug. 1, 1924; Brig Bay, Aug. 6, 1924; Curling, Aug. 11, 1924; Bard Harbor, St. John Bay, July 29, 1925; Ship Cove, Sacred Bay, Aug. 9, 1925; Anse aux Sauvages, Aug. 11, 1925; Wood's Island, Bay of Islands, Sept. 3, 1926.

BRYUM AFFINE (Bruch.) Lindb. Flower Cove, July 10, 1925. BRYUM CAPILLARE L. St. Barbe, Aug. 4, 1924; Flower Cove, July 23, 1925. Bryum Capillare L. var. obconicum Huebn. Bard Harbor, St. John Bay, Aug. 19, 1925.

BRYUM VENTRICOSUM Dicks. Brig Bay, Aug. 7, 1924; Quirpon

Island, Aug. 7, 1925.

Bryum Bimum Schreb. Mistaken Cove, July 10, 1925.

BRYUM CAESPITICUM L. Brig Bay, Aug. 8, 1924; Sandy Cove, Ingornichoix Bay, Aug. 9, 1924; Curling, Aug. 11, 1924.

Bryum argenteum L. Burgeo, Aug. 30, 1924.

MNIACEAE

MNIUM HORNUM L. Rencontre, Aug. 30, 1924.

MNIUM ROSTRATUM Schrad. Flower Cove, July 27, 1924, July 29, 1924.

Mnium subglosum Bry. eur. Flower Cove, July 27, 1924.

MNIUM PUNCTÂTUM (L., Schreb.) Hedw. var. ELATUM Schp. Flower Cove, July 12, 1925; Anse aux Sauvages, Aug. 11, 1925; Yankee Point, Aug. 16, 1925.

CINCLIDIUM STYGIUM Sw. Flower Cove, July 29, 1924; Brig Bay,

Aug. 7, 1924.

AULACOMNIACEAE

Aulacomnium palustre (L.) Schwaeger. Flower Cove, July 29, 1924, Aug. 1, 1924; St. Barbe, Aug. 4, 1924.

MEESEACEAE

Amblyodon dealbatus (Dicks.) Palis. Boat Harbor, July 19,

1925; Cape Raven, Mauve (Noddy) Bay, Aug. 12, 1925.

MEESEA TRICHODES (L.) Spruc. Flower Cove, July 27, 1924, July 30, 1924; Brig Bay, Aug. 7, 1924; Ship Cove, Sacred Bay, Aug. 9, 1925; Savage Cove, Aug. 29, 1925.

Meesea trichodes (L.) Spruc. var. angustifolia (Brid.) Hag.

Cape Norman, Aug. 13, 1925.

The plants in this collection are very different in appearance from those of the other numbers that are typical of the species and seem to be clearly referable to the variety which apparently has been recognized only in Norway heretofore.

CATOSCOPIACEAE

Catoscopium nigritum (Hedw.) Brid. Brig Bay, Aug. 7, 1924; Sandy (Poverty) Cove, July 25, 1925; St. John's Island, July 31, 1925; Yankee Point, Aug. 16, 1925.

BARTRAMIACEAE

Plagiopus oederi (Gunn.) Limp. Bard Harbor, St. John Bay, Aug. 26, 1925.

Bartramia pomiformis (L. ex p.) Hedw. Bard Harbor, St. John Bay, Aug. 19, 1925.

BARTRAMIA ITHYPHYLLA (Hall.) Brid. Bard Harbor, St. John Bay,

Aug. 19, 1925.

Philonotis fontana (L.) Brid. Bard Harbor, St. John Bay, July 27, 1925; Cape Raven, Mauve (Noddy) Bay, Aug. 12, 1925.

ORTHOTRICHACEAE

ORTHOTRICHUM ANOMALUM Hedw. Brig Bay, Aug. 5, 1924; Bard Harbor, St. John Bay, Aug. 19, 1925; Doctor Hill, Highlands of St. John, Aug. 24, 1925.

ORTHOTRICHUM BLYTTII Schp. Ha-Ha Point, Aug. 5, 1925.

ULOTA AMERICANA (Palis.) Limp. Brig Bay, Aug. 5, 1924. ULOTA LUDWIGII (Brid.) Brid. Whitbourne, Aug. 25, 1924.

Ulota Crispula Bruch. Bard Harbor, St. John Bay, July 27, 1925, Aug. 19, 1925.

ULOTA PHYLLANTHA Brid. Argentia, Aug. 26, 1924.

FONTINALACEAE

Fontinalis antipyretica L. Trepassey, Aug. 16, 1924. Fontinalis dalecarlica Schp. Whitbourne, Aug. 25, 1924.

CLIMACIACEAE

CLIMACIUM DENDROIDES (Dill. L.) Web. Flower Cove, July 27–29, 1924.

HEDWIGIACEAE

HEDWIGIA ALBICANS (Web.) Lindb. Gaulton, Aug. 29, 1924.

THELIACEAE

MYURELLA JULACEA (Vill.) Bry. eur. Flower Cove, July 30, 1924; Brig Bay, Aug. 5, 1924; Ha-Ha Point, July 17, 1925.

LESKEACEAE

Leskeella nervosa (Schwaegr.) Loeske. Bay Bulls, Aug. 4, 1925.

THUIDIACEAE

THUIDIUM DELICATULUM (Dill. L.) Mitt. Brig Bay, Aug. 5, 1924; Savage Cove, Aug. 7, 1924.

ABIETINELLA ABIETINA (Dill. L.) C. M. Flower Cove, July 27, 1924; Bard Harbor, St. John Bay, Aug. 31, 1925.

AMBLYSTEGIACEAE

Cratoneurum Glaucum (Lam.) C. Jens. var. falcatum (Brid.) C. Jens. Flower Cove, Aug. 1, 1924; Savage Cove, Aug. 7, 1924, Aug. 29, 1924.

CRATONEURUM FILICINUM (L.) Roth. Brandy Island, July 8, 1925.

Campylium stellatum (Schreb.) Lang. & C. Jens. Bay Bulls,

Aug. 4, 1925.

Campylophyllum halleri (Sw.) Fleish. Flower Cove, July 31, 1924; Sandy (Poverty) Cove, July 25, 1924; Cape Norman, Aug. 13, 1925.

This is a rare species in North America but it seems to be rather well represented on the limestone areas of northern Newfoundland.

Leptodictyum riparium (L.) Warnst. St. Barbe, Aug. 4, 1924. Amblystegium serpens (L.) Bry. eur. Flower Cove, Aug. 2, 1924, July 10, 1925; St. Barbe, Aug. 4, 1924; Brig Bay, Aug. 5, 1924 (a slender form).

Amblystegiella sprucei (Bruch.) Loesk. Brig Bay, Aug. 5,

1924.

Drepanocladus uncinatus (Hedw.) Warnst. Flower Cove, July 30, 1924; Mt. Moriah, Aug. 11, 1924; Curling, Aug. 11, 1924; Harbor Breton, Aug. 29, 1924; Rencontre, Aug. 30, 1924; Bard Harbor, St. John Bay, July 27, 1925; Anse aux Sauvages, Aug. 11, 1925.

Drepanocladus uncinatus (Hedw.) Warnst. var. plumulosum (Bry. eur.) Warnst. Quirpon Island, Aug. 6, 1925; Doctor Hill, Highlands of St. John, Aug. 24, 1925.

DREPANOCLADUS VERNICOSUS (Lindb.) Warnst. Flower Cove,

July 28, 1924, Aug. 1, 1924; Quirpon Island, Aug. 7, 1925.

Drepanocladus revolvens (Sw.) Warnst. Quirpon Island, Aug. 7, 1925.

Drepanocladus fluitans (Dill.) Warnst. Savage Cove, Aug. 7, 1924.

Drepanocladus fluitans (Dill.) Warnst. var. falcatus (Bry. eur.) Warnst. Savage Cove, July 14, 1925.

Hygrohypnum dilatatum (Wils.) Loesk. Bard Harbor, St. John

Bay, Aug. 19, 1925.

Calliergon turgescens (T. Jens.) Kindb. St. Barbe, Aug. 4, 1924; Savage Cove, Aug. 29, 1925.

Calliergon giganteum (Schp.) Kindb. Flower Cove, Aug. 1, 1924.

Calliergon sarmentosum (Wahlenb.) Kindb. Quirpon Island, Aug. 6, 1925.

Calliergon Stramineum (Dicks.) Kindb. Rencontre, Aug. 30,

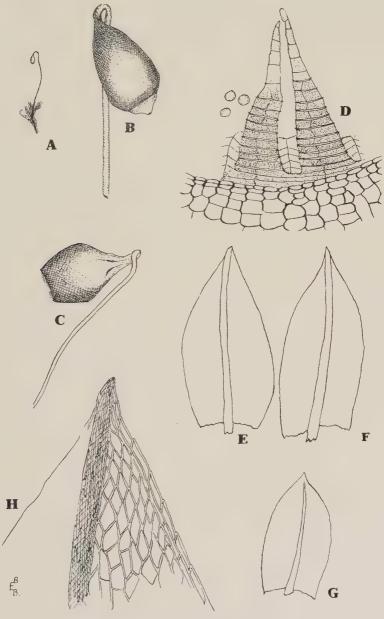
1924; Cape Raven, Mauve (Noddy) Bay, Aug. 12, 1925.

Scorpidium scorpidies (L.) Limp. Flower Cove, July 30, 1924; Whitbourne, Aug. 25, 1924; Bard Harbor, St. John Bay, Aug. 26, 1925; South Head, Bay of Islands, Sept. 1, 1926.

BRACHYTHECIACEAE

Tomenthypnum nitens (Schreb.) Loesk. Flower Cove, July 28, 1924; Savage Cove, Aug. 29, 1925.

Rhodora Plate 158



Bryum Longhi Bartr. sp nov.



Brachythecium salebrosum (Hoffm.) Bry. eur. Flower Cove, July 27, 1924; Brig Bay, Aug. 8, 1924; Rose Blanche, Aug. 31, 1924. Brachythecium reflexum (Stark.) Bry. eur. Savage Cove, Aug. 7, 1924.

ENTODONTACEAE

PLEUROZIUM SCHREBERI (Willd.) Mitt. Common.

PLAGIOTHECIACEAE

Plagiothecium silvaticum (Huds.) Bry. eur. Mt. Moriah, Aug. 11, 1924.

PLAGIOTHECIUM DENTICULATUM (L.) Bry. eur. Bard Harbor, St.

John Bay, July 27, 1925.

Plagiothecium striatellum (Brid.) Lindb. Port aux Basques, July 21, 1924; Bard Harbor, St. John Bay, July 27, 1925.

SEMATOPHYLLACEAE

Brotherella delicatula (James) Fleish. South Head, Bay of Islands, Sept. 1, 1926.

HYPNACEAE

Hypnum Pallescens Hedw. Bard Harbor, St. John Bay, Aug. 19, 1925.

HYPNUM IMPONENS Hedw. Port aux Basques, July 21, 1924. HYPNUM BAMBERGERI Schp. Ha-Ha Point, Aug. 5, 1925.

HYPNUM CUPRESSIFORME L. Flower Cove, July 30, 1924; Brig Bay, Aug. 5, 1924; Argentia, Aug. 27, 1924; Gaulton, Aug. 29, 1924; Rencontre, Aug. 30, 1924; Rose Blanche, Aug. 31, 1924.

Hypnum vaucheri Lesq. Brig Bay, Aug. 5, 1924.

Breidleria arcuata (Lindb.) Loesk. Brig Bay, Aug. 5, 1924. Isopterygium pulchellum (Dicks.) Jaeg. Bard Harbor, St. John Bay, Aug. 19, 1925.

PTILIUM CRISTA-CASTRENSIS (L.) De Not. Savage Cove, Aug. 7, 1924; Brig Bay, Aug. 7, 1924; Bard Harbor, St. John Bay, Aug. 26,

1925; South Head, Bay of Islands, Sept. 1, 1926.

RHYTIDIACEAE

RHYTIDIUM RUGOSUM (Ehrh.) Kindb. Flower Cove, July 27, 1924. RHYTIDIADELPHUS SQUARROSUS (L.) Warnst. Flower Cove, July 27, 1924.

RHYTIDIADELPHUS TRIQUETRUS (L.) Warnst. Brig Bay, Aug. 5, 1924; Savage Cove, Aug. 7, 1924.

RHYTIDIADELPHUS LOREUS (Dill. L.) Warnst. Mt. Moriah, Aug. 11, 1924.

HYLOCOMIACEAE

Hylocomium proliferum (L.) Lindb. Flower Cove, July 27–29, 1924, Aug. 1, 1924; Brig Bay, Aug. 7, 1924; Whitbourne, Aug.

 1924; Yankee Point, Aug. 16, 1925; Bard Harbor, St. John Bay, Aug. 19–26, 1925.

POLYTRICHACEAE

Pogonatum capillare (Rich.) Brid. Curling, Aug. 11, 1924; Trepassey, Aug. 16, 1924; Argentia, Aug. 27, 1924; Harbor Breton, Aug. 29, 1924; Port aux Basques, Aug. 31, 1924; Burgeo, Sep. 9, 1926.

Pogonatum urnigerum (L.) Palis. Quirpon Island, Aug. 7, 1925. Polytrichum alpinum L. Curling, Aug. 11, 1924; Gaulton, Aug. 29, 1924; Rencontre, Aug. 30, 1924; Bard Harbor, St. John Bay, July 27, 1925, Aug. 19, 1925; Ha-Ha Point, Aug. 5, 1925; Argentia, Aug. 11, 1925.

Polytrichum Alpinum L. var. silvaticum (Menz.) Lindb. Ha-Ha Point, July 17, 1925; Bard Harbor, St. John Bay, July 27, 1925, Aug. 19, 1925; Cape Raven, Mauve (Noddy) Bay, Aug. 12,

1925.

Polytrichum Gracile Dicks. Port aux Basques, July 20, 1924; Flower Cove, July 27, 1924; Trepassey, Aug. 16, 1924; Savage Cove, Aug. 29, 1925.

POLYTRICHUM OHIOENSE Ren. & Card. South Head, Bay of

Islands, Sept. 1, 1926.

Polytrichum commune L. var. perigoniale (Michx.) Bry. eur. Bay Bulls, Aug. 20, 1924.

Polytrichum Piliferum Schreb. Port aux Basques, July 23, 1924; Bay Bulls, Aug. 20, 1924.

POLYTRICHUM JUNIPERINUM Willd. Common.

Polytrichum strictum Banks. Quirpon Island, Aug. 16, 1925; Yankee Point, Aug. 16, 1925.

Bushkill, Pike Co., Pennsylvania.

EXPLANATION OF PLATE 158

Bryum Longii Bartr. sp. nov. Fig. A, plant \times 1. Fig. B, moist capsule \times 11. Fig. C, dry capsule \times 11. Fig. D, part of peristome \times 170. Figs. E & F, upper stem leaves \times 32. Fig. G, lower stem leaf \times 32. Fig. H, apex of upper stem leaf \times 170.

REPORTS ON THE FLORA OF MASSACHUSETTS, I.

No satisfactory flora of the State of Massachusetts has been published, although several good floras of counties or smaller areas have appeared. Consequently we are making serial reports covering the vascular plants of the state, thus giving botanists an opportunity to correct and augment the ranges of species as given before a final assembling of the reports.

Unless otherwise stated the order of the plants in these reports

follows that of the 7th edition of Gray's Manual. Wherever names have been changed from those used in the Manual, synonomy has been indicated and appropriate literature cited.

POLYPODIACEAE (FERN FAMILY)

POLYPODIUM L. SNAKE FERN, POLYPODY.

P. virginianum L. (P. vulgare of Manual, not L.; cf. Fernald, Rhodora, xxiv. 141 (1922)). Banks and ledges, usually shaded; common except in the southeastern part of the state, where it is occasional on the mainland, rare in Dukes County, and reported from but one station in Nantucket County (Bicknell, Bull. Torrey Botanical Club, xlvi. 429 (1919)) where it has since disappeared.

Forma **acuminatum** (Gilbert) Fernald. (*P. vulgare* var. *attenuatum* of Manual, not Milde; cf. Fernald, Rhodora, xxiv. 141 (1922)). Milton, *F. G. Floyd*; Pittsfield and Mt. Washington, *R. Hoffmann*.

Forma bipinnatifidum Fernald. (P. vulgare var. cambricum of Manual, not Willd.; cf. Fernald, Rhodora, xxiv. 141 (1922)). Milton, F. G. Floyd.

Forma **deltoideum** (Gilbert) Fernald. (*P. vulgare* var. *auritum* of Manual, not Willd.; cf. Fernald, Rhodora, xxiv. 141 (1922)). Becket (R. Hoffmann, Flora of Berkshire County, Massachusetts, 196 (1922)).

ADIANTUM L. MAIDENHAIR.

A. pedatum L. Rich deciduous woods; locally abundant, becoming rather frequent in the Connecticut Valley, but found only in New Bedford, E. W. Hervey, and Taunton, F. L. Mason and F. W. Grigg, in the southeastern part of the state.

PTERIDIUM Scop. Brake, Bracken.

(Pteris of the Manual; cf. Weatherby, Rhodora, xxi. 176 (1919)).

P. latiusculum (Desv.) Hieron., Wissenschaftliche Ergebnisse der Schwedischen Rhodesia-Kongo-Expedition 1911-12, i. Heft 1: 7 (1914). (Pteris aquilina of Manual, not L.). Dry open woods, clearings, and uplands; very common throughout.

Var. **pseudocaudatum** (Clute) Maxon. (*Pteris aquilina* var. *pseudocaudata* Clute; cf. Maxon, Am. Fern. Journ. ix. 44 (1919)). Dry sand plains; Needham, *T. O. Fuller*, Barnstable County and Nantucket.

PELLAEA Link. CLIFF BRAKE.

P. atropurpurea (L.) Link. Dry calcareous ledges; rare and local, Connecticut Valley and southern Berkshire County, also Berlin (G. E. Stone, Rhodora, ii. 14 (1900)).

CRYPTOGRAMMA R. Br. ROCK BRAKE.

C. Stelleri (Gmel.) Prantl. Shaded calcareous ledges; Colerain, Gill, Montague, Sunderland, and Williamstown.

WOODWARDIA Sm. CHAIN FERN.

- **W. virginica** (L.) Sm. Wet woods and peat bogs, sometimes in water; frequent near the coast, occasional inland to the Connecticut Valley.
- W. areolata (L.) Moore. Swamps and wet woods; occasional near the coast and at rare stations in the Connecticut Valley.

ASPLENIUM L. SPLEENWORT.

- ×A. ebenoides R. R. Scott. A hybrid between Asplenium platyneuron and Camptosorus rhizophyllus, on limestone ledges; Ashley Falls, Mrs. J. R. Sanford, and Sheffield, F. Walters.
- A. Trichomanes L. Dry often calcareous ledges; frequent except in the southeastern part of the state, where it is known only from Taunton, New Bedford, and Westport.
- A. platyneuron (L.) Oakes. EBONY SPLEENWORT. Rocky soil and ledges, also on shaded banks; frequent, becoming only occasional in the southeastern part of the state, and not known from Nantucket.

Forma **serratum** (E. S. Miller) R. Hoffmann, Proc. Bost. Soc. Nat. Hist. xxxvi. 193 (1922). Occurring locally over the same range.

Forma **Hortonae** (Davenp.) L. B. Smith. (1. platyneuron var. incisum (E. C. Howe) Robinson.) Sunderland, C. S. Trow, and Great Barrington, W. W. Eggleston.

A. Ruta-muraria L. Calcareous ledges; rare and local, Berkshire County and Mt. Toby, Sunderland.

¹ Asplenium Platyneuron (L.) Oakes, forma **Hortonae** (Davenp.) L. B. Smith, n. comb. A. ebeneum Ait. var. incisum E. C. Howe, Ann. Rep. Regents Univ. N. Y., xxii. 104 (1869). A. ebeneum Ait. var. Hortonae Davenp., Rhodora, iii. 1. t. 22 (1901). A. ebeneum Ait. forma Hortonae Clute, Fern Bull., xiv. 86 (1906).

ATHYRIUM Roth. SPLEENWORT.

(Asplenium in part, of Manual; cf. Weatherby, Rhodora, xxi. 174 (1919)).

- A. angustifolium (Michx.) Milde. Rich calcareous woods; occasional, Mt. Toby in Sunderland and Leverett, and also northwestern Franklin County, and Berkshire County.
- **A.** acrostichoides (Sw.) Diels. SILVERY SPLEENWORT. Rich woods; rather frequent, except in the southeast where found only in Sandwich, M. L. Fernald & Bayard Long and New Bedford, E. W. Hervey.
- A. asplenioides (Michx.) Desv. (Asplenium Filix-femina of Manual in part, not Bernh.; cf. Butters, Rhodora, xix. 188 (1917). Low moist woods near the coast from the vicinity of Boston southward; occasional.

Forma **subtripinnatum** Butters, Rhodora, xix. 190 (1917). Milton, F. G. Floyd, and West Tisbury, F. C. Seymour.

A. angustum (Willd.) Presl. (Asplenium Filix-femina of Manual in part, not Bernh.; cf. Butters, Rhodora, xix. 190 (1917)). Lady Fern. Woods, fields, and pastures; common on the mainland but not definitely known from Dukes and Nantucket Counties.

Var. elatius (Link.) Butters, Rhodora, xix. 191 (1917). Occasional over the same range as the species.

Var. **rubellum** (Gilbert) Butters, Rhodora, xix. 193 (1917). Occasional over the same range as the species.

Forma confertum Butters, Rhodora, xix. 195 (1917). Brockton, A. A. Eaton.

Forma laciniatum Butters, Rhodora, xix. 195 (1917). West Roxbury, F. G. Floyd.

Forma **elegans** (Gilbert) Butters, Rhodora, xix. 196 (1917). Medford, Roxbury, Hyde Park.

CAMPTOSORUS Link. WALKING LEAF.

C. rhizophyllus (L.) Link. Shaded, calcareous rock crevices; occasional in Berkshire County and the Connecticut Valley, also Brookfield, (G. E. Stone, Rhodora, ii. 14 (1900)), Needham, *T. O. Fuller*, (Bull. Torr. Bot. Club. vi. 199 (1878)), and formerly Weston (Flora of the Boston District, Rhodora, ix, 83 (1907)).

Forma auriculatus Clute, Fern Bulletin, xv. 87 (1908). New Marlboro, R. Hoffmann.

POLYSTICHUM Roth.

P. acrostichoides (Michx.) Schott. Christmas Fern. Rocky woods, rich soil; frequent except in the southeastern part of the state where it is found in Taunton, New Bedford, Barnstable, Sandwich, and Chilmark.

Forma **incisum** (Gray) Gilbert, List N. A. Pterid., 19 (1901). (*P. acrostichoides* var. *Schweinitzii* (Beck) Small. Occasional over the same range as the species.

Forma **crispum** Clute, Our Ferns in Their Haunts, 317 (1901). Spencer, Mils E. L. Horr.

P. Braunii (Spenner) Fée. Rocky woods at high altitudes; rare, Pittsfield, Florida, North Adams, and Williamstown.

THELYPTERIS Schmidel. SHIELD FERN, WOOD FERN.

(Phegopteris and Aspidium of Manual; cf. Weatherby, Rhodora, xxi. 174, 176 (1919)).

T. palustris Schott. (Aspidium Thelypteris). Marsh Fern. Swamps, common.

Forma Pufferae (A. A. Eaton) L. B. Smith. Sudbury, Mrs. J. J. Puffer.

- T. simulata (Davenp.) Nieuwl. (.1spidium simulatum). Massachusetts Fern. Swampy woods; occasional on the mainland and Nantucket, not reported from Dukes County.
- T. noveboracensis (L.) Nieuwl. (Aspidium noveboracense). New York Fern. Open woods; occasional in Dukes and Nantucket Counties, common elsewhere.
- **T. Phegopteris** (L.) Slosson. (*Phegopteris polypodioides*). Beech Fern. Damp rich woods; frequent except from the southeastern part of the state where known only from Plymouth, Lakeville, New Bedford, and Falmouth.
- T. hexagonoptera (Michx.) Weatherby. (*Phegopteris hexagonoptera*). Broad Beech Fern. Rich open woods; rather frequent in the western and central parts of the state, becoming less common eastward and found only in the vicinity of New Bedford in the southeast.
- T. Dryopteris (I.) Slosson. (Phegopteris Dryopteris). OAK

 ¹ Thelypteris Palustris Schott, forma Pufferae (A. A. Eaton) L. B. Smith,
 n. comb. Nephrodium Thelypteris Desv. forma Pufferae A. A. Eaton, Fern Bull., x.
 78 (1902). Aspidium Thelypteris Sw. forma Pufferae B. L. Robinson, Rhodora, ix.
 83 (1907).

Fern. Damp rich woods; common in the western part of the state, becoming occasional eastward but found only in New Bedford (E. W. Hervey, Flora of New Bedford, 51 (1911)) in the southeast.

T. marginalis (L.) Nieuwl. (Aspidium marginale). Ledges and rocky woods; common.

Forma **elegans** (J. Robinson) Weatherby, Proc. Bost. Soc. Nat. Hist., xxxvi. 197 (1922). (*Aspidium marginale* var. *elegans*, J. Robinson.) Occasional over same range as species.

Forma **Davenportii** (F. G. Floyd) L. B. Smith. Milton, F. G. Floyd.

- **T.** Goldiana (Hook.) Nieuwl. (Aspidium Goldianum). Rich woods; rather frequent from the Connecticut Valley westward, also Spencer (Jackson, Flora of Worcester County, 3 (1909)), Mt. Wachusett, W. W. Bailey; and Medford (doubtfully native), L. F. Hobbs.
- XT. Boottii (Tuckerm.) Nieuwl. (Aspidium Boottii). Wet woods; occasional in the vicinity of T. cristata and T. spinulosa var. intermedia and generally considered a hybrid between them.
- **T.** cristata (L.) Nieuwl. (Aspidium cristatum). Swamps and wet woods; frequent except on Nantucket.

Var. **Clintoniana** (D. C. Eaton) Weatherby. (Aspidium cristatum var. Clintonianum). Occasional except in the southeastern part of the state whence not reported.

T. spinulosa (O. F. Muell.) Nieuwl. (Aspidium spinulosum). Moist woods; common.

Var. **fructuosa** (Gilbert) Fernald, Rhodora, xxviii. 146 (1926). Woods; occasional except in the southeast, whence not reported.

Var. **intermedia** (Muhl.) Nieuwl. (Aspidium spinulosum var. intermedium). Rich woods; common except in the southeast where it is occasional. Not reported from Dukes County.

Var. concordiana (Davenp.) Weatherby. (Aspidium spinulosum var. concordianum). Single plant in swamp, Concord, H. A. Purdie, 1902.

Var. americana (Fisch.) Weatherby. (Aspidium spinulosum var. dilatatum forma anadenium). Woods, usually at high elevation, Berkshire County; also Brockton, A. A. Eaton and Byfield, E. H. Clarkson.

¹Thelypteris marginalis (L.) Nieuwl forma **Davenportii** (F. G. Floyd) L. B. Smith, n. comb. *Nephrodium marginale* Richard forma *Davenportii* F. G. Floyd, Rhodora, iv. 244 (1902). *Aspidium marginale* Sw. forma *Davenportii* Eastman, N. E. Ferns, 27 (1904).

Hybrids between different species of *Thelypteris* have been found occasionally in the state, but with the exception of **T**. **Boottii** are too critical for inclusion in this list.

CYSTOPTERIS Bernh. BLADDER FERN.

- **C.** bulbifera (L.) Bernh. Rich, especially calcareous slopes; rather frequent, Berkshire County and the western part of Franklin County.
- **C. fragilis** (L.) Bernh. Shaded ledges; occasional in Plymouth and Bristol Counties, becoming frequent to common northward and westward.

WOODSIA R. Br.

- **W. ilvensis** (L.) R. Br. Dry ledges; rather frequent, but not reported from the southeastern part of the state.¹
- **W. obtusa** (Spreng.) Torr. Dry rocky woods and open places; frequent, except in the southeastern part of the state, where it is known only from New Bedford and Attleboro.

DENNSTAEDTIA Bernh.

(Dicksonia of the Manual; cf. Weatherby, Rhodora, xxi. 175 (1919)).

D. punctilobula (Michx.) Moore. Hay-scented Fern. Dry woods and pastures; common on the mainland, found locally in Dukes and Nantucket Counties.

ONOCLEA L.

O. sensibilis L. Sensitive Fern. Damp woods and meadows; common.

Forma obtusilobata (Schkuhr) Gilbert. A teratological form.

PTERETIS Raf.

(Onoclea in part, of the Manual; cf. Weatherby, Rhodora, xxi. 175 (1919)).

P. nodulosa (Michx.) Nieuwl. (Onoclea Struthiopteris). OSTRICH FERN. Rich, moist soil, especially alluvium; locally abundant in the western part of the state and occasional in the valley of the Merrimac and the Boston Basin; reported from Worcester and

¹ W. alpina has been reported from Boylston (D. C. Eaton, Ferns of North America, ii. 108), but the specimen proved to be diseased W. ilvensis,

Leicester in the central part of the state (J. Jackson, Flora of Worcester County, 4 (1909)).

> J. R. CHURCHILL WALTER DEANE F. W. GRIGG C. H. KNOWLTON A. S. PEASE S. N. F. SANFORD L. B. SMITH, Chairman

Flora of Massachusetts.

THE AUTHORS OF SONCHUS ARVENSIS, VAR. GLABRESCENS.—In 1910 attention was called to the presence in our flora of an extreme variation of Sonchus arvensis, with glabrous involucres. The plant was then called var. glabrescens Wimm. & Grab. (1829); but it now appears that the name goes back to an earlier publication by Guenther, Wimmer & Grabowski (1824). The plant is frequently referred to by a later varietal name, var. laevipes Koch (1846). Its bibliography is S. ARVENSIS, Var. GLABRESCENS Guenth. Grab. & Wimm. Enum. Stirp. Phan. Siles. 127 (1824); Wimm. & Grab. Fl. Siles. pt. 2, ii. 220 (1829). Var. laevipes Koch, Syn. ed. 2:511 (1846).—M. L. FERNALD, Gray Herbarium.

AN EXCEPTIONALLY LARGE QUERCUS ILICIFOLIA.—Ordinarily the common scrub oak, Quercus ilicifolia, does not exceed 4 m. in height, although very occasionally individuals of 5 m. are reported. An abnormally large specimen attracted my attention while collecting for the New England Botanical Club during the annual field excursion in southern Rhode Island early this summer. Accurate measurements were not made for lack of time, but conservative estimates justify the following approximations: height, 10 m.; diameter at 2 m. from the ground, 18 cm. In order to convince my companion, Mr. Rehder, of the correct identification, I was obliged to climb the tree for the necessary evidence. The record will be placed in the Herbarium of the New England Botanical Club at Cambridge under date of June 12th, 1927, Washington County, R. I., in the vicinity of West Kingston Station.—R. J. EATON, Cambridge, Mass.

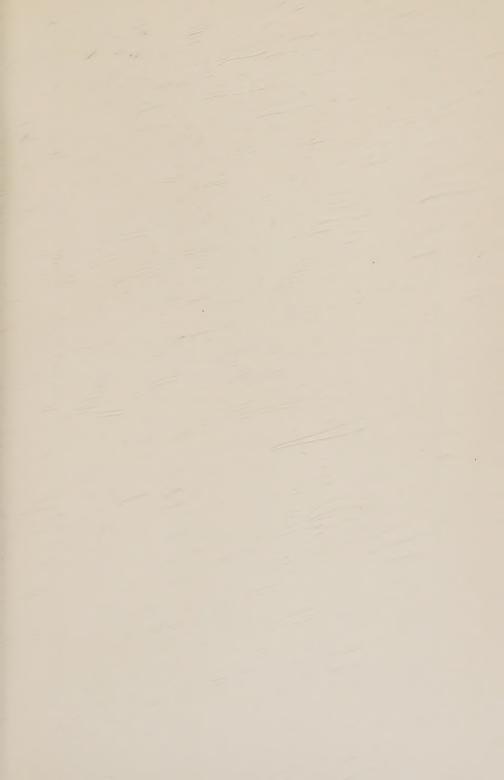
¹ Fernald & Wiegand, Rhodora, xii. 145 (1910).

"Additions to the Flora of Worcester County, Massachusetts."—When Joseph Jackson died in 1924, he left the nearly completed manuscript of a fourth edition of his *Flora of Worcester County*. It has proved impracticable to print this entire; but Mr. Norman P. Woodward and a committee of the Worcester Natural History Society have culled the new records from it, brought them up to date, and published them in an attractive and well-made pamphlet of 59 pages.¹ The work shows every evidence of care and accuracy and should take its place as a reliable and useful contribution to the record of the New England flora.

As might be expected in a region which has so long possessed a group of active observers, the number of native plants added to those previously known is not large. Any student of weed floras, however, will be interested and impressed by the relatively enormous array of exotic species which have recently turned up, largely as a result of using wool waste and other imported fertilizers in war gardens. They include one, *Perezia aletes* Macb., which was unknown to science until it appeared among the weeds of Worcester.—C. A. Weatherby, Gray Herbarium.

¹Additions to the Flora of Worcester County, Massachusetts, by Joseph Jackson, 1909. Worcester, 1927. Published and for sale by the Natural History Society, 12 State St., Worcester, Mass. Bound in cloth, \$1.00; paper, 50 cents.

Vol. 29, no. 348, including pages 241 to 238 and title page of volume, was issued 18 January, 1928.



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